REMARKS

Claims 16-23 and 25-37 are pending in the present application. Claims 1-15 and 24 were previously cancelled without prejudice to or disclaimer of the subject matter contained therein. Claims 16, 17, 29, and 30 have been amended, and claim 37 has been added. Claims 16, 29, and 37 are independent.

Allowable Subject Matter

The Examiner states that claims 25-28 and 36 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claim. In response,

independent claim 37 is added combining the allowable subject matter of objected-to claim 25 and independent claim 1;

independent claim 16 is amended to set forth a novel combination of elements not suggested by the references cited by the Examiner; and

independent claim 29 is added to recite a novel combination of elements not suggested by the references cited by the Examiner.

Therefore, independent claims 16, 29, and 37 are in condition for allowance.

Rejections Under 35 U.S.C. § 103 (a)

Claims 16-18, 29, 30, and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shake et al. (U.S. 6,587,242) in view of Uchiyama et al. (U.S. 6,204,944); and

claims 19-23, 31, 32, 33, and 34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Shake et al. and Uchiyama et al., and further in view of Sasaoka et al. (U.S. 6,574,404). These rejections, insofar as they pertain to the presently pending claims, are respectfully traversed.

35 U.S.C. § 103(a) Shake et al. and Uchiyama et al. Rejection

The Shake et al. is directed to a transmission system that transmits a control signal corresponding to the overhead accommodating time division multiplexing information at a frequency that is the same (or nearly the same as) the main signal. FIGS. 11, 14, and 15 are representative of the Shake et al. invention, and illustrate monitor light generating means 16 that outputs an optical pulse train (monitor light) having a wavelength and a repeating frequency connected to an upstream portion of communication path 3; and a receiver 2 including wavelength dispersion regulating means 41 and a wavelength dispersion compensation amount control means 44 connected to a downstream portion of the communication path 3.

As disclosed in Shake et al. column 15 and 16, and illustrated in FIGS. 11, 14, and 15, the transmitted signal light and the monitor light are transmitted through communication path 3, and upon reaching the receiver 2, the transmitted signal light is wavelength dispersion compensated within the receiver 2.

In contrast to Shake et al., the present invention (as set forth in independent claims 16 and 29) provides a dispersion compensation unit optically coupled to an optical communications path, a service channel emitter supplying a

service channel optical signal including data representing signal quality or control information to either the optical communications path or an alternate optical communications path, and a control circuit operatively coupled to the dispersion compensation module for adjusting a dispersion characteristic associated with the dispersion compensating module in response to data carried by said service channel optical signal.

As a result of the novel combination of elements of the present invention, the service channel optical signal carries, for example, data representing signal quality or control information to the service channel emitter, the service channel emitter outputting this information to further modulate the service channel optical signals. The service channel optical signals are then communicated to one of said optical communication path and said alternate optical communication path.

Referring to Shake et al. column 14, lines 50-67, col. 15, lines 1-15, column 16, and FIGS. 9 and 11, the Examiner asserts that monitor light generating means 16 connected to an upstream portion of the communication path 3 of Shake et al. teaches the service channel emitter of the present application, asserts that wavelength dispersion regulating means 41 teaches the dispersion compensation module of the present invention, and further asserts that wavelength dispersion compensation amount control means 44 Shake et al. teaches the control unit of the present invention.

However, as can been seen in FIGS. 9, 11, 14, and 15, Shake et al. merely teaches the transmitted signal light and the monitor light are transmitted through communication path 3, and only upon reaching the receiver 2, is the transmitted signal light wavelength dispersion compensated. Specifically, as can be seen in Shake et al. FIGS. 9, 11, 14, and 15, this document fails to suggest a service channel optical signal including data representing signal quality or control information being sent from the wavelength dispersion compensation amount control means 44 (in the receiver 2) to any of the wavelength dispersion regulating means 41, the monitor light generating means 16, or the optical communications path 3.

Further, as clearly shown in Shake et al. column 15, lines 51-60, this document merely discloses "The wavelength dispersion compensation amount control means 44 controls the amount of wavelength dispersion ... so that the detected clock component is maximized".

Further Shake et al. column 16, lines 53-65 merely discloses "....the wavelength dispersion adjustment means 41, in place of the monitor clock detection means 43 and the wavelength dispersion compensation amount control means 44, it is possible to use a method that measures the Q value of the monitoring light....."

The Examiner concedes that Shake et al. fail to disclose sending a supervisory signal onto an alternate path, and then cites Uchiyama et al. FIG. 27

to teach a control light source of chirped pulses to control a dispersion compensation unit 18.

However, a careful review of the Uchiyama et al. document (column 11, lines 10-56, and FIGS. 1 and 27) indicates that Uchiyama et al. merely discloses a control light source 13 for generating a down-chirped control pulses for determining the polarization state of the optical signals. Chirped pulses are not the same as a service channel optical signal including data representing signal quality or control information that is supplied by a service channel emitter to either the optical communications path or an alternate optical communications path, as set forth in the present invention.

Thus, the Uchiyama et al. document cannot make up for the deficiencies of Shake et al.

Since Shake et al. fail to disclose a service channel optical signal including data representing signal quality or control information from the wavelength dispersion compensation amount control means 44 to the wavelength dispersion regulating means 41, to the monitor light generating means 16, or to the optical communications path, and since Uchiyama et al. document cannot make up for the deficiencies of Shake et al., no combination of Shake et al. and Uchiyama et al. can suggest the combination of elements set forth in each of independent claims 16 and 29 of the present invention.

In the rejection of dependent claims 19-23 and 31-34, the Examiner cites Sasaoka et al. to disclose "dispersion is substantially zero", and "a controller

coupled to and supplying control signal to a thermal regulator". As such, Sasaoka et al. cannot make up for the deficiencies of Shake et al. and Uchiyama et al. in the rejection of independent claims 16 and 29.

Therefore, independent claims 16 and 29 are in condition for allowance.

In addition, added independent claim 37 is in condition for allowance as discussed above.

The Examiner will note that dependent claims 17 and 30 are amended.

All dependent claims are now in condition for allowance at least due to their dependence on allowable independent claims, or due to the additional novel features set forth therein. All claims are now in condition for allowance.

For the above reasons, the Applicants respectfully request reconsideration and withdrawal of the art rejections.

CONCLUSION

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Carl T. Thomsen, Registration No. 50,786, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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